

### R E M A R K S

Careful review and examination of the subject application are noted and appreciated. Applicants' representative thanks Examiner Corriellus for the indication of allowable matter.

### SUPPORT FOR CLAIM AMENDMENTS

Support for the amendments to the claims can be found in the drawings as originally filed, for example, FIG. 6 and 7, and in the specification as originally filed, for example, on page 10, line 10 through page 13, line 3. As such, no new matter has been introduced.

### CLAIM OBJECTIONS

The objection to claims 15-20 has been obviated by appropriate amendment and should be withdrawn.

### CLAIM REJECTIONS UNDER 35 U.S.C. §103

The rejection of claims 1, 5-12 and 14 under 35 U.S.C. §103(a) as being unpatentable over FIG. 1 of the specification in view of Kindinger et al. (U.S. Patent No. 4,609,884, hereafter Kindinger) in further view of LeFebvre (U.S. Patent No. 3,689,754) is respectfully traversed and should be withdrawn.

The rejection of claim 13 under 35 U.S.C. §103(a) as being unpatentable over FIG. 1 of the specification in view of Kindinger is respectfully traversed and should be withdrawn.

In contrast to the cited references the presently claimed invention (claim 1) provides a circuit configured to generate a spread spectrum clock signal, where (i) the circuit comprises a voltage controlled oscillator having an automatically controlled nonlinear gain, (ii) the nonlinear gain varies in response to a frequency of the spread spectrum clock signal and (iii) a function curve for the nonlinear gain is determined according to predetermined criteria. Claims 13 and 14 include similar limitations.

The Office Action asserts that the background of the specification "does not teach that the VCO has an automatically controlled gain and that it also fails to teach that the gain of the VCO varies in response to a frequency of said spread spectrum clock signal and a function curve for said linear [sic; nonlinear] gain is generated by a predetermined criteria" (see page 3, lines 1-6 of the Office Action). Kindinger does not cure the deficiencies cited by the Office Action.

Specifically, Kindinger does not teach or suggest a VCO having an automatically controlled **nonlinear** gain where the **nonlinear** gain of the VCO **varies in response to a frequency** of a

spread spectrum clock signal, as presently claimed. In particular, Kindinger states:

. . . If the peak RF voltage across the varactors becomes greater than the DC reverse bias level, the varactors will become forward biased for a portion of the RF waveform cycle leading to rectification spurs and a degradation in sideband noise performance of the VCO.

To correct this problem, some VCO's have employed automatic gain control (AGC) circuits **wherein the output level of the VCO is held constant**. This is generally accomplished by detecting the output level of the VCO and providing a feedback signal to adjust the gain of the oscillator. Once the output level is established, the minimum steering line voltage can be set greater than the peak RF voltage level to prevent rectification (column 1, lines 34-49 of Kindinger, emphasis added).

Thus, Kindinger does not appear to teach or suggest a nonlinear gain that varies in response to a frequency of a spread spectrum clock signal as presently claimed. Rather, the automatic gain of Kindinger is (i) adjusted in response to an output level of the VCO and (ii) applied to the VCO to maintain the output level of the VCO.

Furthermore, Kindinger does not appear to teach or suggest a nonlinear gain as presently claimed. Specifically, Kindinger states:

In practicing the invention, an RF peak detector is used to control the gain of the active device in an oscillator in response to a control signal taken from the resonant circuit. In the preferred embodiment, the control signal is an RF potential developed

across a voltage divider which is formed by the varactor diodes and a fixed capacitor. By controlling the gain of the active device in this manner, **the oscillator RF output level "tracks" the DC bias level of the steering line.** Thus, at lower steering line voltages the RF output level is contemporaneously reduced. Accordingly, the RF output level will always be less than the steering line voltage preventing RF rectification of the varactors. Further, at higher steering line levels, the output power of the VCO is allowed to **correspondingly increase** to provide a maximized output power level (column 2, lines 4-15 of Kindinger, emphasis added).

Since the RF output level (i) **tracks** the DC bias level of the steering line and (ii) **correspondingly increases** with steering line levels, Kindinger appears to describe a linear gain relationship.

Kindinger is silent regarding (i) the gain of the VCO being nonlinear, (ii) <sup>yes see lines 43-46</sup> the gain of the VCO varying in response to a frequency of the output of the VCO or (iii) <sup>taught by Febno</sup> a function curve for the gain being determined by predetermined criteria. Since Kindinger is silent regarding (i) the gain of the VCO being nonlinear, (ii) the gain of the VCO varying in response to a frequency of the output of the VCO or (iii) a function curve for the gain being determined by predetermined criteria, it follows that Kindinger does not teach or suggest a VCO having an automatically controlled nonlinear gain where the nonlinear gain varies in response to a frequency of a spread spectrum clock signal, as presently claimed. Therefore, Kindinger does not teach or suggest each and every element of the presently claimed

invention which the Office Action asserts FIG. 1 of the specification fails to teach. As such, the presently claimed invention is fully patentable over the combination of Kindinger and FIG. 1 of the specification and the rejection of claim 13 should be withdrawn.

LeFebre does not cure the deficiencies of Kindinger. LeFebre is directed to a function generator (Title). LeFebre pertains to **function generators** for generating a non-linear functions using linear segments (see column 1, lines 5-8 of LeFebre). A first independent variable signal may be applied to a multiple switch variable gain circuit, a **second independent variable signal** after being weighted by pulse width techniques in a sequencing circuit, **controls the switching function of the variable gains circuit**. LeFebre appears silent regarding a function curve for an automatically controlled nonlinear gain of a voltage controlled oscillator in a circuit configured to generate a spread spectrum clock signal, as presently claimed.

Furthermore, LeFebre does not teach or suggest a nonlinear gain that varies in response to a frequency of the spread spectrum clock signal, as presently claimed. Specifically, the function generator of LeFebre provides one or more gain functions of respective independent variable input signals under control of another independent variable input signal (see the Summary of the Invention of LeFebre). LeFebre further states that "the preferred

embodiment of the function generator of the present invention is particularly suited to the generation of a gain function of an input signal under control of another input signal" (column 2, lines 42-46 of LeFebre). LeFebre does not appear to teach or suggest a nonlinear gain as presently claimed. In particular, LeFebre states:

It should be appreciated that in the bit interval during which the enabling pulse terminates, the active switch associated with that bit interval is on for a time linearly proportional to the control input signal on the lead 22. Thus during that bit interval, **the gain provided by the variable gain circuit 24 varies as a linear function of the control input signal** (column 5, lines 59-68 of LeFebre, emphasis added)).

Since the gain provided by the variable gain circuit 24 of LeFebre varies as a linear function of the control input signal, it follows that LeFebre does not teach or suggest a nonlinear gain that varies in response to a frequency of a spread spectrum clock signal as presently claimed. Thus, Kindinger, LeFebre and FIG. 1 of the specification, alone or in combination, do not teach or suggest each and every element of the presently claimed invention. Therefore, the Office Action fails to meet the Office's burden of factually establishing a *prima facie* case of obviousness (MPEP §2142). As such, the presently claimed invention is fully patentable over the cited references and the rejections should be withdrawn.

Furthermore, the Office Action fails to present specific findings or any line of reasoning why the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. To prevent the use of hindsight based on the invention to defeat patentability of the invention, the Federal Circuit requires a showing of a motivation to combine the references that create the case of obviousness (*In re Rouffet*, 47 USPQ 2d 1453, 1457-58 (Fed. Cir. 1998)). The Patent Office must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed (*In re Rouffet*, 47 USPQ 2d 1453, 1457-58 (Fed. Cir. 1998)). The Office Action does not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have compelled the skilled artisan to select the cited references for the suggested combination. Because the Office Action does not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of the presently claimed invention to make the combination, the inference is that the references were selected with the assistance of

hindsight (*In re Rouffet*, 47 USPQ 2d 1453, 1457-58 (Fed. Cir. 1998)).

The Federal Circuit has forbidden the use of hindsight in the selection of references that comprise the case of obviousness. See *In re Gorman*, 933 F.2d 982, 986, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991). Determination of obviousness can not be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in the way they were combined by the inventor (*ATD Corporation v. Lydall, Inc.*, 48 USPQ 2d 1321, 1329 (Fed. Cir. 1998)). It is impermissible to reconstruct the claimed invention from selected pieces of prior art absent some suggestion, teaching, or motivation in the prior art to do so (see, e.g., *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051-52, 5 USPQ 2d 1434, 1438 (Fed. Cir. 1988)). Furthermore, it is insufficient to select from the prior art the separate components of the inventor's combination, using the blueprint supplied by the inventor (*Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985)).

The statements on page 3, lines 13-14 and on page 5, lines 12-13 of the Office Action that "Kindinger et al. completes



applicant's admitted prior art" suggests the use of the Applicants' disclosure as a blueprint for selecting the cited references. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious (*In re Fritch*, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992)). The Federal Circuit has stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)). It is improper, in determining whether a person of ordinary skill would have been led to a combination of references, simply to "[use] that which the which the inventor taught against its teacher" (*In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002) citing *W.L. Gore v. Garlock, Inc.*, 220 USPQ 303, 312-13 (Fed. Cir. 1983)). Therefore, the Office Action fails to meet the Office's burden to factually establish a *prima facie* case of obviousness (MPEP §2142). As such, the presently claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

Claims 2-12 and 15-20 depend, either directly or indirectly, from claims 1 or 14 which are believed to be allowable. As such, the presently claimed invention is fully patentable over the cited references and the rejection should be withdrawn.

New claims 21-24 depend, either directly or indirectly, from claims 1, 13 or 14 which are believed to be allowable. As such, the presently claimed invention is fully patentable over the cited references.

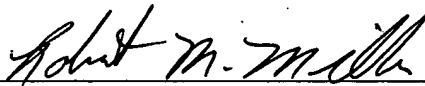
Accordingly, the present application is in condition for allowance. Early and favorable action by the Examiner is respectfully solicited.

The Examiner is respectfully invited to call the Applicants' representative should it be deemed beneficial to further advance prosecution of the application.

If any additional fees are due, please charge our office Account No. 50-0541.

Respectfully submitted,

CHRISTOPHER P. MAIORANA, P.C.

  
Robert M. Miller  
Registration No. 42,892  
24840 Harper Avenue, Suite 100  
St. Clair Shores, MI 48080  
(586) 498-0670

Dated: May 14, 2004

Docket No.: 0325.00377